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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/604,627	JANG, WEN-YUEH	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ida M. Soward	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Applicant's amendment filed February 22, 2005.
2. ☒ The allowed claim(s) is/are 1,2,4,5,7-9 and 19-26.
3. ☒ The drawings filed on 29 June 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                     |                                                                                        |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                         | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance              |
|                                                                                                                     | 9. <input type="checkbox"/> Other _____.                                               |

  
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### DETAILED ACTION

This Office Action is in response to the Applicant's amendment filed February 22, 2005.

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a correspondence with Belinda Lee on March 2, 2005.

The application has been amended as follows:

1. claim 18 filed August 6, 2003 has been cancelled; and
2. claims 18-25 filed February 22, 2005 have been renumbered and amended as follows:

Claims 10- ~~47~~18 (cancelled)

~~48~~19. (currently amended) A resistance random access memory structure, comprising:

a plurality of word lines in a substrate;

a plurality of reset lines coupled to said word lines;

a dielectric layer on said substrate;

a plurality of memory units in said dielectric layer, each said memory including a bottom electrode, a top electrode, and a resistive thin film between said top electrode and said bottom electrode, said bottom electrodes of said memory units in a same column being coupled to one of said reset lines;

a plurality of said bit lines on said memory units, said top electrodes of said memory units in a same row being coupled to one of said bit lines; and

a plurality of reset line contact windows in said dielectric layer, each of said reset line contact windows being coupled to one of said reset lines(.).

1920. (currently amended) The resistance random access memory structure of claim 1819, wherein said reset lines are set in said word lines, the ion type of said reset lines being opposite to the ion type of said word lines.

2021. (currently amended) The resistance random access memory structure of claim 1819, wherein said reset lines are set on the surface of said word lines, and wherein the material of said reset lines is comprised of a metal.

2122. (currently amended) The resistance random access memory structure of claim 1819, further comprising a plurality of word line contact windows in said dielectric layer, wherein each of said word line contact windows are coupled to one of said word lines.

2223. (currently amended) The resistance random access memory structure of claim 2122, further comprising a plurality of doped regions in said word lines, wherein each of said doped regions are coupled to one of said word line contact

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windows, and wherein an ion types of said doped regions and said word lines ~~is~~are the same.

2324. (currently amended) The resistance random access memory structure of claim 1819, wherein said memory units in a same column are set on a surface of said reset lines.

2425. (currently amended) The resistance random access memory structure of claim 819, wherein said resistive thin film material is resistance-reversible.

2526. (currently amended) The resistance random access memory structure of claim 1819 wherein said resistive thin film material is selected from colossal magneto resistive thin films and oxidation thin films having Perovskite structure.

### ***Allowable Subject Matter***

Claims 1-2, 4-5, 7-9 and 19-26 are allowed.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to resistance random access memory structures:

Gogl et al. (US 2002/0039308 A1)

Hikawa et al. (5,753,553)

Hoffmann et al. (US 2002/0018361 A1)

Hsu et al. (US 6,753,562 B1)

Ooishi et al. (US 2002/0110016 A1)

Ooishi (US 2002/0181272 A1)

Park et al. (US 6,815,784 B2)


Sakata et al. (US 6,573,586 B2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ida M. Soward whose telephone number is 571-272-1845. The examiner can normally be reached on Monday - Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IMS  
March 2, 2005

  
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